



## Memorandum

To: *Stephanie Vaughn (USEPA)*  
*Elizabeth Buckrucker (USACE)*

From: *Sharon Budney (CDM Smith)*  
*George Molnar (CDM Smith)*

Date: *March 15, 2012*

Re: *Status Report (March 2012)*  
*CPG Oversight of Chemical Water Column Monitoring*  
*Lower Passaic River Restoration Project*

On behalf of the United States Environmental Protection Agency (EPA) and the United States Army Corps of Engineers (USACE), Kansas City District, CDM Federal Programs Corporation (CDM Smith) is providing oversight of the Cooperating Parties Group (CPG) remedial investigation/feasibility study (RI/FS) field activities associated with chemical water column monitoring (CWCM), and the collection of chemical data in the Lower Passaic River (LPR).

CDM Smith oversight activities were conducted February 20 and February 21, 2012. Oversight included observations of the collection of samples in the LPR and tributaries in support of the CWCM study. In addition, CDM Smith also collected split samples at select locations. All activities were conducted in accordance with the CPG *Quality Assurance Project Plan/Field Sampling Plan Addendum (QAPP/FSP)*, *Remedial Investigation Water Column Monitoring/Small Volume Chemical Data Collection*, Revision 2, August 2011. The Louis Berger Group Inc. (LBI) conducted oversight of CWCM activities in Newark Bay. Oversight observations made by LBI staff are not included in this summary.

Photographs of field activities are in Attachment 1. Copies of the logbook notes are in Attachment 2. Copies of the chain of custody records are in Attachment 3.

### **General Summary**

Oversight consisted of observations of in-river and field facility activities conducted by CPG contractors AECOM. Ocean Surveys Incorporated (OSI) provided vessel and sampling support.

All sample locations were verified by oversight staff using the map provided in CPG's QAPP/FSP. Review of the United States Geological Survey (USGS) gauging station at Dundee Dam indicated that maximum flow approached 600 cubic feet per second (cfs). This flow rate was well within the criteria required for this event to be considered a routine event.

Per AECOMs QAPP, if river flow velocities are greater than (>) 250 cfs at Dundee Dam, samples would be collected at river mile (RM) 10.2 instead of 13.5. In addition, if flow at the

dam is less than ( $<$ ) 1,000 cfs, samples would be collected at locations identified as Tidal 1 and Tidal 2 based on the location of the salt wedge instead of RMs 4.2 and 6.7 if flows were  $>$  1000 cfs. AECOM followed this approach which accounted for each of the "Tidal" locations to move to account for the location of the salt wedge. In summary, the following locations were sampled during this sampling event:

- Above Dundee Dam
- RM 0
- RM 1.4
- RM 10.2
- Saddle River
- Second River
- Third River
- Tidal 1 which consisted of RMs 2.6, 4.8 (sampled twice), and 7.0
- Tidal 2 which consisted of RMs 2.0, 3.1 (sampled twice), and 4.2

Upon arrival at each RM location, CPG lowered a YSI water quality instrument to the bottom of the riverbed and then raised it while simultaneously collecting water quality data in real time. Attached to the instrument was sampling tubing attached to a remote pump located on the sampling vessel. After a full "cast", the instrument was lowered to approximately 3 feet above river bottom, and the pump was activated allowing the tubing to purge for 39 seconds followed by sample collection. Once all samples were collected at the lower depth, the instrument was raised to approximately 3 feet below river surface, the tubing was allowed to purge and another sample set was collected.

A similar approach was used above Dundee Dam and at the tributaries; however, samples were only collected from a single depth, approximately midway in the water column. The YSI and sampling tubing were deployed either off a bridge such as at Saddle River, or crews waded in such as at the Second and Third Rivers. Sampling above Dundee Dam was conducted from a boat.

For this sampling event, CDM Smith accepted split samples from the following locations:

- RM 10.2 (during maximum flood tide)
- Saddle River (non-tidal)
- RM 3.1 (during maximum flood tide)
- RM 1.4 (during high slack tide)
- RM 4.2 (during maximum ebb tide)

Throughout each day, samples were collected and shuttled back to the CPG facility for processing and packing. Oversight of activities at the CPG field facility conducted on February 20 and 21 indicated a relatively organized system of sample logging, labeling, chain of custody generation, and packing given the large volume of samples and bottleware involved. All sampling packing activities were conducted in accordance with AECOM's QAPP.

### **Summary of Daily Activities**

The following is a summary of daily activities observed during CDM Smith's oversight of CWCM activities:

#### **Dundee Dam, Saddle River, Third River, and RM 10.2 (February 20, 2012)**

CDM Smith oversight staff observed boat-based sample collection above Dundee Dam and RM 10.2. In addition, sampling activities on the Saddle and Third Rivers were also observed. At each location, a YSI water quality instrument obtained a profile of real-time measurements through the water column, followed by the collection of surface water via pump and tubing mounted to the instrument. Dundee Dam, Saddle River and Third River surface water samples were collected at mid river depths, while RM 10.2 surface water samples were collected from approximately 3 feet above river bottom, and 3 feet below river surface.

CDM Smith oversight staff collected split samples at the RM 10.2 and Saddle River locations. Split samples and corresponding CPG samples are presented in Table 1. Copies of CDM Smith's signed chain of custody can be found in Attachment 3.

#### **RMs 0, 1.4, 3.1 and 4.2 (February 21, 2012)**

CDM Smith oversight staff observed boat-based sample collection at RMs 0, 1.4, 3.1 and 4.2. At each location, a YSI water quality instrument obtained a profile of real-time measurements through the water column, followed by the collection of surface water from approximately 3 feet above river bottom, and 3 feet below river surface via pump and tubing mounted to the instrument.

Per AECOM's QAPP, samples were collected four times over the period of one tidal cycle at each location beginning with max flood tide and ending at low slack tide. Oversight crews observed one sampling event at each of the above mentioned RMs starting at RM 3.1 (maximum flood tide) followed by 1.4 (high slack tide), 4.2 (maximum ebb tide), and at RM 0 (low slack tide). Split samples and corresponding CPG samples are presented in Table 1. Copies of CDM Smith's signed chain of custody can be found in Attachment 3.

#### **QAPP Compliance**

All field activities were conducted in accordance with AECOM's QAPP procedures. During sample collection for mercury analysis, the appropriate "clean hand" procedures were followed. In summary "clean hands" procedures were followed with the designated "clean hand" field crew member holding both the sample bottle and "clean" bag. At no point during sampling was the bottleware in contact with the ground or any surface until it was placed into a laboratory-provided bag.

**Table 1**  
**Cooperating Parties Group and CDM-Smith Split Sample Identification**  
**February 2012 Chemical Water Column Monitoring Oversight**  
**Lower Passaic River Restoration Project**  
**Lower Passaic River, New Jersey**

Location	CPG Sample ID	CDM Split Sample ID	QC Samples	Tide Event	Collection Date	Analysis
RM 10.2	12B-CE02-T102-AS	12B-CE02-T102-AS-C		maximum flood	2/20/2012	PCB congeners, PCDD/PCDF, cadmium - copper - lead (total and dissolved), mercury (total and dissolved), TOC, DOC, POC, SSC, TDS
Saddle River	12B-CE05-TSR1-AS	12B-CE05-TSR1-AS-C	MS/MSD **	NA	2/20/2012	
RM 3.0 (Tidal 2)	12B-CE02-TTR2-BS	12B-CE02-TTR2-BS-C		maximum flood	2/21/2012	
		12B-CE02-TTR2-BS-CX	Duplicate *	maximum flood	2/21/2012	
RM 1.4	12B-CE03-T014-BS	12B-CE03-T014-BS-C		high slack	2/21/2012	
RM 4.2 (Tidal 1)	12B-CE04-TTR1-AS	12B-CE04-TTR1-AS-C		maximum ebb	2/21/2012	

CPG - Cooperating Parties Group

DOC - dissolved organic carbon

ID - identification

MS/MSD - matrix spike/matrix spike duplicate

NA - not applicable; tributaries were not sampled over the course of a full tidal cycle

PCB - polychlorinated biphenyl

PCDD/PCDF - polychlorinated dibenzodioxins/polychlorinated dibenzofurans

POC - particulate organic carbon

QC - quality control

SSC- suspended solids concentration

TDS - total dissolved solids

TOC - total organic carbon

\* - field duplicate sample of CDM split sample 12B-CE02-TTR2-BS-C

\*\* - MS/MSD only for total and dissolved cadmium - copper - lead - mercury, TOC, and DOC

**Attachment 1**  
**Photographs of Physical Water Column Monitoring Activities**



Photo 1. Crews sampling at Third River.



Photo 2. Crew setting up at RM 0.





Photo 3. Crew sampling at RM 10.2.



Photo 4. Crew sampling at RM 10.2.



Photo 5. Crews sampling from bridge at Saddle River. YSI and tubing were lowered from the bridge to the river below.



Photo 6. Samples being processed at CPG facility.



## **Attachment 2**

### **Copies of Oversight Field Logbook Notes**

Location LPR Date 8/16/11Project / Client CWCM - oversight of CPG Facility

crews labeling & cleaning bottles were. Labels get covered in foam & bottles inserted into foam lining as bubblewrap. Every thing seems to be in line w/ LPR-G-06.

George helps AE Com shuttle sample from 10.2. & John Rolfe will transport old 3rd bottles down the piers & take samples collected this morning.

Chris Whitten made observations of packing yesterday.

Pic computer software for generating COCs

Don (603) 387-0532

10.2 4:47 11A-CE01-T102-AS-C

11A-CE03-T102-AS-C 10:50

1.4 1.4D 8:29 11A-CE02-T014-AS-C

1310 Bar departs CPG Facility. CW heads down to Kearney Boatway to pick up samples & shuttle crews back to the facility.

1730 CW arrives @ CDM and then  
+ crews wrap up samples  
8/16/11

Location Lower Passaic River Date 2/20/12Project / Client CWCM - oversight of AE Com  
P. Connelly

0205 - P. Connelly onsite at CPG Facility

0215 - S. O'Hare (COM Fall) and Chris Trillens lunch onsite. AE Com personnel already onsite

TPE - modified level D + survival suits

Weather - sky partly cloudy, 40's°F

Task - oversight of AE Com doing chemical water column monitoring. Also collecting EPA split samples

0300 - PC and SU depart dock on the Sandy Miller captained by Chris. AE Com departed several minutes earlier to go to RM 10.2

0411 - AE Com begins collecting RM 10.2 bottom sample.

0430 - Bottom sample complete. Water depth = 13.5 ft. Pump set at 10.5 ft.

0436 - Begin collecting top interval at RM 10.2. We are collecting split here.

0500 - Finished collecting samples. Split ID = 12B-CE02-T102-AS-C

AE Com collects water column profile using YSE.



Location Lower Passaic River Date 2/20/12Project / Client CWCM / oversight of AECOMP. Connelly0600 - PC returns to CP&G Facility dock with <sup>split</sup> samples collected at RM 10.2

0700 - E. Kulikovsky (CDM Smith) on-site

0730 - J. Rakowski (CDM Smith) on-site. PC gives split samples to him to store in ~~bag~~ truck until shipneck. Samples are stored on ice in cooler. PC

0900 - E. Kulikovsky and P. Connelly follow AECOM crew to Saddle River to oversee sampling and collect a split sample

1000 - Begin collecting split sampleCE05-TSRI-AS-C PC1100 - Finished collecting split PC

1130 - observe AECOM collecting Field Equip.

Blank CE05-TSRI-XR

1200 - Finish collecting equipment blank

1245 - PC mobilizes with AECOM sample crew lead by Ellen Fyock to location CE05-TSRI-AS to observe sampling.

1330 - AECOM begins collecting CE05-TSRI-AS1413 - Finished collecting CE05-TSRI-AS  
Return to CP&G Facility PC1530 - CDM Smith off site PC7-hrLocation Lower Passaic River Date 2/21/12Project / Client CWCM / oversight of AECOMP. Connelly0300 - P. Connelly and S. O'Hare on-site at CP&G dock to meet Chris of Miller's Land PC

TPE - Modified level D + surviving suite &amp; weather - clear, 40's °F

Task - oversight of AECOM and split sampling of chemical water column monitoring PC0400 - PC and SO arrive at Tidal 2 location 12B-CE02-TTR2-BS. Water depth = 12.8 ft. Sample will be taken from 9.8 ft by PC0429 - Begin sampling. CDM Smith is collecting a split and duplicate here. CDM Smith sample ID = 12B-CE02-TTR2-BS-CPop sample here an X at the end of the name PC

0540 - Finished collecting sample

0555 - AECOM begins collecting sample 12B-CE02-TTR2-AS PC

0617 - Finished collecting sample

0635 - PC and SO mobilize to meet AECOM sampling crew at RM 1.4 PC0729 - Begin collecting sample PCPC - by 2-21-12



Location Lower Passaic River Date 2/21/12Project / Client CWCM / Oversight of AECOM12B-CE03-T014-BS-C ————— PC0747 - Finished collecting sample0757 - AECOM begins collecting sample12B-CE03-T014-AS ————— PC0815 - AECOM Finished collecting sample0945 - PC and SO head to Tidal 1 locationat RM 4.2 near FBI building in  
Newark, NJ.1035 - AECOM begins collecting 12B-CE04-TTR1-BS1056 - AECOM Finished collecting sample1115 - AECOM begins collecting 12B-CE04-TTR1-AS

CMA Smith is collecting split sample

12B-CE04-TTR1-AS-C1150 - Finished sampling —————1205 - Head to Arlington dock to transfer  
split samples to E. Kukulsky —————1215 - Departed dock to go to RM O.U. to  
observe AECOM sampling ————— PC1530 - PC offsite —————page by  
2/21/12

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_



Location Lower Passaic R. Date 2/20/12Project / Client LPR / USACECWCM - Oversight

02:25 → SO arrives at CPG facility in East Rutherford, NJ. Pat Ginnelly is at facility gathering bottleware and working with AECOM Helen SO 2/20 and Ryan SO 2/20/12 to determine sampling scheme.

Weather → Cool with moderate winds ~ 35°F  
PPE → Level D Modified with survival suits

02:40 → PC & SO, loan vehicle with bottleware and supplies. SO & PC leave CPG facility to head down to dock and meet Chris Laughrey of Miller.

03:02 → Depart dock en route to RM 10.2.  
03:30 → Attempt to anchor at RM 10.2 but experience trouble due to high winds.

Location Lower Passaic River Date 2/20/12Project / Client LPR / USACECWCM - Oversight

04:00 → Miller anchors and ties off to OSI vessel.

04:11 → Collect sample

12B-CEQ2-T1Q2-B.S.

AECOM collects analyses in correct order.

04:29 → AECOM completes sample collection of 12B CEQ2-T1Q2-B.S.

Total depth is 13.5' and sample was collected at 10.5'

Note: A YSI 6930 was lowered down to depth to record water quality parameters

04:35 → AECOM team pulls YSI out of water and attaches new tubing to YSI and lower to top (3' box)

04:36 → Collect sample

which is CDM split  
12B-CEQ2-T1Q2-AS-C

Samples are placed immediately into a cooler



Location Lower Passaic River Date 2/20/12Project / Client LPR / USACECWCM - Oversight

with ice.

05:10 → AECOM conducts the second water profile by lowering to bottom and pulling back up. YSI 6920 is continuously taking readings. \* Note: Prior

to tying off to boat, AECOM conducted water profile. So, there are 2 water profiles conducted before and after the sampling event.

05:20 → After Caninus of OSI arrives on location RM 10.2 to pick up coolers and take back to CPG facility.

05:45 → Travel back up to CPG facility to drop PC off at dock with samples. PC will wait for Ek/OR to arrive. PC will accompany Ek to the Saddle River and collect a split sample.

30 → 120/12

Location Lower Passaic River Date 2/20/12Project / Client LPR / USACECWCM - Oversight

\* Coordinates for first location are below:

N → 719751.07

E → 592139.45

06:20 → Arrive (SO) boat at RM 10.2 and tie off into OSI vessel.

06:35 → AECOM lowers YSI 6920 into water and conducts water profile.

Total Depth is 18.7'

06:41 → Lower / place YSI / pump to 15.7' and begin purging.

06:46 → Begin collecting sample 12B-CE03-T102-BSI and 12B-CE03-T102-BT (Field Duplicate). The field duplicate will include each of the analyses.

The order of analyses collected are as follows: mercury (total/dissolved), cadmium, copper, lead

So the 2/20/12

06:41

18.7 / 15.7



Location Lower Passaic River Date 2/20/12Project / Client LPR / USACECWCM - Oversight

(Total/dissolved), <sup>Sulfide</sup> TOC, PO<sub>4</sub>/P, SSF/TDS, PCB Cong, PCDD/F, & chlorophyll.

07:16 → AECOM completes collection of 12B-CE03-T102-BS and duplicate 12B-CE03-T102-BD

08:22 → Lower YSI 6920 back into water and place at 3' below water surface.

Tubing was replaced for the next sample on the YSI.

07:25 → Start purging

07:27 → End Purging

07:28 → Begin collecting sample 12B-CE03-T102-AS

The coordinates for this location are:

N → 719734.08

E → 592145.03

07:42 → Complete collection of sample 12B-CE03-T102-AS and head back over to CPG

8:54 2/20/12

Location Lower Passaic River Date 2/20/12Project / Client LPR / USACECWCM - Oversight

Facility to drop off extra bottleware and supplies to JR, Elk, & PC.

08:00 → Arrive back at CPG dock and hand off supplies.

08:30 → Arrive back at RM 10.2 and tie off to QSI vessel. Will wait for next sampling time at 09:50

09:53 → Lower YSI 6920 down to bottom of river and raise back up. recording water quality parameters

Total Depth → 116.5'

N → 719730.44

E → 592163.00

09:57 → Lower YSI with tubing attached to 13.5'

10:00 → Start purging

10:01 → Stop purging and begin collecting sample 12B-CE04-T102-BS for all analyses.

Correction: 12 analyses

8:54 2/20/12



Location Lower Passaic River Date 2/20/12Project / Client LPR / USACECWCM - Oversight

were collected in the following order: Mercury (Total/Dissolved), Metals (Total/Dissolved), Sulfide, TOC, DOC/POC, Alkalinity, SO<sub>4</sub>, Cl, SSC/TDS, PCB/Conagens, POP/F, & Chlorophyll.

10:16 → Finish collecting  
12B-CE04-T102-BS and

pull up YSI and replace tubing for top sample.

10:25 → Lower pump to 3' below water surface.

10:27 → Begin collecting sample 12B-CE04-T102-AS

10:50 → Perform / conduct water profile from top to bottom using YSI 6920.

11:10 → SO heads back to CPG facility to use rest room and speak to Kristen Duracher regarding schedule for tomorrow.

11:40 → Arrive back at  
SO 4 - 2/20/12

Location Lower Passaic River Date 2/20/12Project / Client LPR / USACECWCM - Oversight

CPG facility and contact Ed Kulkuski. Ed informs SO they are finishing samples at Saddle River and will arrive at CPG facility shortly.

12:00 → SO is informed that the Third River will be sampled shortly. SO calls PC to provide oversight at Third River. PC will follow AECOM field team to the Third River when he returns from the Saddle River.

12:30 → Kristen Duracher of AECOM and informs SO that due to location of salt wedge and the fact that the flow is ~600 cfs, Third River 1 has changed and Third River 2 has changed.

13:22 → Begin pumping at 12B-CE01-T102-BS at 10'

SO 4 - 2/20/12



Location Lower Passaic River Date 2/20/12Project / Client LPR / USACECWCM - Oversight

13:24 → Begin collecting sample at 12B-CE01-T102-BS. A profile was taken prior to purging.

2 Total Depth → 13'

SV → 719.724.67

E → 592156.24

13:42 → Complete collection of sample

13:45 → Replace tubing and lower YSI to

13:48 → Start purging at <sup>3' below surface</sup> 12B-CE01-T102-AS

13:50 → Begin collecting sample at 12B-CE01-T102-AS. The "clean hands" method is used to collect the mercury samples. The samplers demonstrate correct procedures and do not allow the bottle to touch the floor or anything.

14:05 → Finish collecting sample 12B-CE01-T102-BS and pull up YSI and remove tubing.

14:08 → Lower the YSI 6920 to conduct the water profile

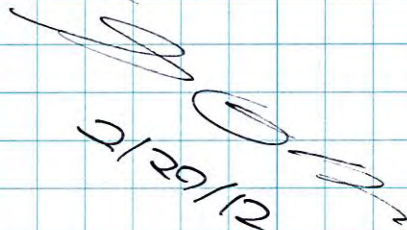
S O'P 2/20/12

Location Lower Passaic River Date 2/20/12Project / Client LPR / USACECWCM - Oversight

14:10 → Complete water column profile and travel back to CPG dock.

14:40 → Arrive at CPG dock and drive over to CPG facility to oversee sample processing.

15:45 → Report CPG facility en route to hotel.

  
2/20/12



Location Lower Passaic River Date 2/21/12Project / Client LPR / USACECWCM - Oversight

02:45 → Depart hotel en route to CPG facility. Pick up ice many

03:05 → Arrive at CPG dock and load boat with sample coolers and supplies.

03:30 → Depart CPG dock

en route to first sample location 12B-CE02-TTR2-BS-C which is near RM 3.

Weather → Dark, cold ~ 29°F

PPE → Level D Modification

04:10 → Arrive on station

Tidal 2 (12B-CE02-TTR2)

and tie up to YSI vessel.

04:24 → Cast YSI 6920 at location and conduct water profile.

Total Depth → 12.8

YSI / tubing is collecting at

04:29 → Begin pumping

04:29 → End Pumping and

begin sampling 12B-CE02-

TTR2-BS-C and field duplicate

12B-CE02-TTR2-BS-CX

80% 2/21/12

Location Lower Passaic River Date 2/21/12Project / Client LPR / USACECWCM - Oversight

05:40 → Complete collection of sample location 12B-CE02-TTR2-BS-C/X

05:45 Coordinates are:

N → 695209.41

E → 592821.35

05:45 → Replace tubing / raise YSI out of water and lower back down to 3' below surface water

05:50 → Begin pumping

05:55 → Begin sampling

12B-CE02-TTR2-AS

Total Depth → 12.8

Depth of YSI / tubing →

06:17 → Complete collection of 12B-CE02-TTR2-AS. The sampling crew collected

all analyses using proper techniques. Specifically the mercury analysis was collected with the correct "clerk hands" procedure and was not allowed to be touching down.

80% 2/21/12



Location Lower Passaic River Date 2/21/12Project / Client LPR / USACECWCM - Oversight

- \* Coordinates are the same - at top location as bottom location
  - 06:27 → OSI jump starts boat and CDM Smith unties off OSI vessel and proceeds to RM 1.4 location.
  - 06:40 → Arrive at RM 1.4 and tie off to OSI vessel.
  - 07:15 → Lower YSI 6900 to perform the water profile.
  - Total Depth → 19.1'
  - YSI / tubing Depth → 16.1'
  - 07:18 → Lower YSI to 16.1' to begin purging.
  - 07:25 → Begin purging lines / filter
  - N → 691194.83
  - E → 597989.18
  - 07:37 → Begin collecting sample 12B-CE03-T014-BS
  - 07:47 → Finish collecting sample and hop off OSI vessel
- SO 2/21/12

Location Lower Passaic River Date 2/21/12Project / Client LPR / USACECWCM - Oversight

- 07:52 → Pull up YSI and replace tubing.
  - 07:54 → Drop YSI back down to 3' below water surface.
  - 07:57 → Collect sample 12B-CE03-T014-AS
  - 08:12 → Finish sampling 12B-CE03-T014-AS
  - 08:15 → Conduct a cast to profile water column. GPS coordinates of second sample is listed below:
  - N → 691194.83
  - E → 597989.18
  - 09:45 → Depart RM 1.4 and head up to Tidal 1 location at ~ RM 4.2 (adjacent to FBI Building)
  - 10:10 → Arrive at Tidal 1 location and tie up to OSI vessel. OSI informs CDM Smith that FBI questioned AECOM/OSI of activities earlier this
- SO 2/21/12



Location Lower Passaic River Date 2/21/12Project / Client LPR / USACECWCM - Oversight

morning. However, everything has been cleared.

10:29 → OSI lowers YSI 6920 and conducts water profile.

Total Depth → 16.3'

YSI / tubing → 13.3'

10:31 → OSI sets tubing at 13.3' and begins pumping

10:33 → End purge and gets ready to sample.

10:35 → Collect sample 12B-CE04-TTR1-BS

10:50 → SO calls Ek to inform him that heavy boat ramp will not be accessible to drop off samples since low tide. SO

suggests meeting at boat ramp in North Arlington.

10:57 → Finish collecting sample 12B-CE04-TTR1-BS and raise YSI 6920 out of water and replace tubing.

SO 2/21/12

Location Lower Passaic River Date 2/21/12Project / Client LPR / USACECWCM - Oversight

Coordinates are below:

N → 693716.99'

E → 585616.37'

11:05 → Attach new tubing to YSI 6920 and lower to top sample to 3' below water surface

11:15 → Begin collecting split sample 12B-CE04-TTR1-BS

11:50 → Finish collecting split sample at 12B-CE04-TTR1-AS-C

11:58 → OSI pulls up YSI and conducts water profile.

12:00 → SO calls Ek to inform that field team will meet at boat launch by Arlington Diner in 15 minutes.

12:20 → Arrive at Arlington dock and transfer sample coolers to Ek.

12:30 → Break for lunch

13:15 → Depart to RMD

SO 2/21/12



Location Lower Passaic River Date 2/21/12Project / Client LPR / USACE  
CWCM - Oversight

Dusty's crew moved down to just north of western spur.

Joy's crew moved to / near Sham Resins; Ryan's crew stayed at same location.

13:40 → Arrive at RMO. The winds are stronger than the tides which causes OSI vessel to move around. The

water is choppy and will prevent CDM Smith from tying up to OSI vessel.

14:05 → OSI lowers YSI to total depth and records water profile.

14:15 → AECOM starts collecting 12B-CE01-T000-BS. ~~Update~~: CDM Smith is anchored ~ 100' away due to rough water and cannot see ~~exactly~~ <sup>SO 2/21/12</sup> from a great angle.

14:25 → AECOM completes collection of 12B-CE01-T000

SO 2/21/12

Location Lower Passaic River Date 2/21/12Project / Client LPR / USACE  
CWCM - Oversight

BS. CDM Smith departs RMO since it proves to be too difficult to provide grant oversight and travels back to CPG dock.

15:10 → Arrive back at CPG dock and inform Chris L. of Miller's Lunch that Oversight field program is complete.

15:20 → SO checks to make sure CDM Smith has all equipment / supplies and finishes paperwork.

15:50 → SO departs CPG facility en route home.

Summary

CDM Smith collected the following split samples:

12B-CE08-TTR2-BS-C

12B-CE02-TTR2-BS-CX

12B-CE03-T104-BS-C

12B-CE04-TTR1-BS

SO 2/21/12

**Attachment 3**  
**Copies of Signed Chain of Custodies**



Items/Reason	Relinquished by	Date	Received by	Date	Time
	J.R.	2-20-12			



AirbillNo: 798080668800

## CHAIN OF CUSTODY RECORD

Passaic - F2L

Case Complete: False

Cooler #:

No: 2-022112-095757-0008

Lab: AXYS Analytical Services Ltd.

Lab Address: 2045 Mills Road W.

Lab Phone: 8883730881

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD	Sampler
	12B-CE02-TTR2-BS-C	PCBs (CONGENERs)	Surface Water	2/21/2012	04:29	1	1 liter amber	4 C	N	GM
	12B-CE02-TTR2-BS-C	Dioxin/Furan	Surface Water	2/21/2012	04:29	1	1 liter amber	4 C	N	GM
	12B-CE02-TTR2-BS-C	Extra bottle	Surface Water	2/21/2012	04:29	1	1 liter amber	4 C	N	GM
	12B-CE02-TTR2-BS-CX	PCBs (CONGENERs)	Surface Water	2/21/2012	04:29	1	1 liter amber	4 C	N	GM
	12B-CE02-TTR2-BS-CX	Dioxin/Furan	Surface Water	2/21/2012	04:29	1	1 liter amber	4 C	N	GM
	12B-CE02-TTR2-BS-CX	Extra bottle	Surface Water	2/21/2012	04:29	1	1 liter amber	4 C	N	GM
	12B-CE03-T014-BS-C	PCBs (CONGENERs)	Surface Water	2/21/2012	07:27	1	1 liter amber	4 C	N	GM
	12B-CE03-T014-BS-C	Dioxin/Furan	Surface Water	2/21/2012	07:27	1	1 liter amber	4 C	N	GM
	12B-CE03-T014-BS-C	Extra bottle	Surface Water	2/21/2012	07:27	1	1 liter amber	4 C	N	GM
	12B-CE04-TTR1-AS-C	PCBs (CONGENERs)	Surface Water	2/21/2012	11:15	1	1 liter amber	4 C	N	GM
	12B-CE04-TTR1-AS-C	Dioxin/Furan	Surface Water	2/21/2012	11:15	1	1 liter amber	4 C	N	GM

Special Instructions:	SAMPLES TRANSFERRED FROM
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	J.R	2-24-12									

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	J.C.	2-21-12									

[illegible]



Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	J.R.	2-21-12									

AirbillNo: Hand Deliver

## CHAIN OF CUSTODY RECORD

Passaic - F2L

Case Complete: False

Cooler #:

No: 2-022112-092137-0006

Lab: EPA-DESA laboratory

Lab Address: 2890 Woodbridge Ave

Lab Phone: 7323216707

[illegible]

Special Instructions:

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	J.R.	2-21-12									



[illegible]

Passaic - F2L  
Case Complete: False  
Cooler #:

Lab: Microbac Laboratories, Inc.  
Lab Address: 250 W. 84th Drive  
Lab Phone: 2197698378

[illegible]

Special Instructions:	SAMPLES TRANSFERRED FROM
	CHAIN OF CUSTODY #

[illegible]

[illegible]



DateShipped: 2/21/2012  
CarrierName: FedEx  
AirbillNo: 798080678113

## CHAIN OF CUSTODY RECORD

Passaic - F2L  
Case Complete: False  
Cooler #:

No: 2-022112-100301-0009

Lab: Shealy Environmental  
Lab Address: 106 Vantage Point Drive  
Lab Phone: 803-791-9700

[illegible]

Special Instructions:

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	J.R	2-21-12									